View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Elsevier - Publisher Connector

LETTERS TO THE EDITOR

Regarding "Hybrid repair of aortic arch dissections"

The transparency and the honesty of the report of Cochennec and et al[1] are to be commended. Unfortunately, such negative outcomes are soon likely to be buried in the literature.

Cochennec et al performed total arch debranching via sternotomy in seven of 17 patients, all of them with chronic type B dissection. In the remaining 10, they performed cervical debranching, five in the acute phase of type B dissection. All of the sternotomy total arch debranching had immediate stenting of the type B dissection. In the cervical debranching, four of the five chronic dissections had delayed stenting, with five acute dissections immediately stented.

The mortality of the acute dissection cervical debranching and stenting was 60%, with retrograde type A dissections in three of five. The mortality of chronic dissections repair via cervical or sternotomy debranching was 17%. Two patients died of cerebrovascular accident, and one additional patient in the chronic group had a nonfatal neurologic injury.

It is our understanding of this article that failed obliteration of the false lumen was documented in six of the surviving 12 (50%), with four persistent patencies (33%) after reintervention.

While 17% mortality for treatment of chronic type B dissection with aneurysmal degeneration sounds fair, only two patients were over the age of 75 (one died), where the use of hybrid techniques has been shown to be superior to open arch repair techniques.[2] Their data suggests that arch hybrid repairs were being applied to patients as young as 37 years.

Open techniques in patients under 75 years in experienced centers are lower than 17% shown here. And to add insult to injury, only two of the three of the surviving patients have effective treatment of their dissecting aneurysm, the remaining being left with endoleaks.

The early reports of stent grafting in complicated acute type B dissections were encouraging, especially compared with historic controls of open repairs.[3] As technology disseminates across the "real world," our impression is that while rarely reported, the incidence of retrograde type A dissection has increased. When treating a dissected arch, the leap to a full type A dissection is a very short one. Based on our experience, and the smattering of reports as described by Cochennec et al, the best approach to manage a "complicated" type B dissection extending to the aortic arch may be an open arch replacement with a frozen elephant trunk.[4] The reports available in such scenarios using frozen elephant trunk show mortalities in the 10%-30%; this is far better than the 60%.

While we remain enthusiastic on endovascular approaches, we cannot let commercial interests, career advancement wishes, or misplaced desires to minimize an incision push us to perform procedures with substandard outcomes. Our fear is that a fragmented practice can easily lose track of what is available to treat a given condition and only offer what is available at a given institution or geography.

In an increasingly globalized world, dissemination of knowledge and expertise to benefit the patients should be our first priority, which would allow all of us to find the right application of the right technology in any given scenario.

Murat Ugur, MD
Eduard Quintana, MD
Alberto Pochettino, MD

Division of Cardiovascular Surgery
Mayo Clinic
Rochester, Minn

REFERENCES

1. Cochennec F, Tresson P, Cross J, Desgranges P, Allaire E, Becquemin JP. Hybrid repair of aortic arch dissections. J Vasc Surg 2013;57:1560-7.
2. Milewski RK, Szeto WY, Pochettino A, Moser GW, Moeller P, Bavaria JE. Have hybrid procedures replaced open aortic arch reconstruction in high-risk patients? A comparative study of elective open arch debranching with endovascular stent graft placement and conventional elective open total and distal aortic arch reconstruction. J Thorac Cardiovasc Surg 2010;140:590-7.
3. Zeeshan A, Woo EY, Bavaria JE, Fairman RM, Desai ND, Pochettino A, et al. Thoracic endovascular repair for acute complicated type B aortic dissection: superiority relative to conventional open surgical and medical therapy. J Thorac Cardiovasc Surg 2010;140:S109-15.
4. Tsagakis K, Pacini D, Di Bartolomeo R, Benedik J, Cerny S, Gorlitzer M, et al. Arch replacement and downstream stent grafting in complex aortic dissection: first results of an international registry. Eur J Cardiothorac Surg 2011;39:87-94.

http://dx.doi.org/10.1016/j.jvs.2013.08.021

Reply

Thank you, Dr Ugur, for those insightful comments. As you mentioned in your comment, it is crucial to differentiate acute from chronic (aneurysmal degeneration) complicated type B dissections (TBAD).

In our study, the results of hybrid repair combining cervical debranching and thoracic stent grafting for complicated acute TBAD involving the arch were disappointing. Indeed, of five patients, three died during the postoperative course (two of retrograde aortic dissections and one of aspiration pneumonia). Those results are in contrast with recent data reporting mortality rates of ~10% after thoracic endovascular aortic repair for complicated acute TBAD.[1,2]

Although we cannot draw any firm conclusion from our limited series, our impression is that deploying a stent graft in the curvature of a recently dissected aortic arch in zone 0 or 1 may increase the risk of retrograde aortic dissection compared with simple stent grafting of the thoracic descending aorta. However, there is no ideal surgical treatment for those patients presenting with acute TBAD involving the arch and malperfusion syndrome or impending rupture.

Regarding complicated chronic TBAD involving the arch, given our results of hybrid repair, we now tend to choose the frozen elephant trunk technique using E-vita Open devices (JOTEC, Hechingen, Germany) as the first-line treatment, when anesthesiologists and cardiac and vascular surgeons consider the patient can afford it. However, this strategy is based on our experience and not evidence-based. We still think that complete aortic arch debranching is a good option in patients who have had previous replacement of the ascending aorta because the risk of retrograde dissection is avoided.

We agree with you that the incidence of retrograde type A dissections might be underestimated, especially when the thoracic stent graft is deployed in the arch. In our series, it occurred in four of 17 patients (23%), which is, surprisingly, much higher than previously published data.

In your comment, you stated that only two-thirds of surviving patients have effective treatment of their dissecting aneurysm, the remaining being left with endoleak. This is not strictly true if we look at updated follow-up data. Among the 12 surviving patients,